



Beyond full text usage

Electronic Resources & Libraries Conference
Atlanta, March 20, 2008

Kevin Cohn
Director of Client Services

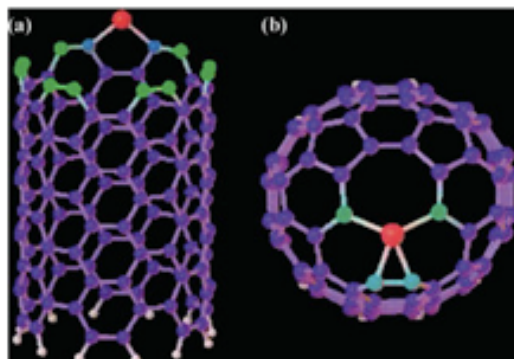


Figure 1. Spontaneous closure of a (6,6) armchair SWNT. The model contains 120 carbon atoms (blue and green spheres), 1 cobalt atom (big red sphere), and 10 hydrogen atoms (small white spheres at the bottom). Blue and green spheres represent carbon coordination of 3 and 2, respectively. Coordinations between 2 (green) and 3 (blue) are represented by the intermediate color palette. The hydrogen atoms and the neighboring bottom ring of carbons were kept fixed during the simulation. (a) Side view of the open-end starting configuration at 0 K, with 10 two-coordinated carbon atoms at the top edge and a Co atom forming a pentagon with four other carbons of the "armchair" edge (ground-state minimum). (b) Top view of the closed-end configuration after 12 ps at 1500 K and a quench to 0 K. The tip atomic structure is symmetric and composed of 6 pentagons, 12 hexagons, 1 heptagon, and 1 triangle.

🎥 A Quicktime movie (movie 1) showing a [quantum molecular dynamics simulation of the spontaneous closure of a \(6,6\) armchair SWNT at 1500–2000 K](#) is available.

🎥 A Quicktime movie (movie 2) showing a [quantum molecular dynamics simulation of the incorporation of an additional carbon atom from the vapor phase into the catalyzed closed-end tip of a \(6,6\) armchair SWNT at ~2000 K](#) is also available.

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Treatment Option 1

Treatment Option 2

Treatment Option 3

Appropriate Medical Management and Close Follow-up for Adherence and Efficacy

FEATURED COMMENT

Posted: 10/30/07

Medical management [AVERT, COURAGE] and aggressive risk factor control, should be the mainstay at this time - in this patient with intermediate DUKE score. The 80% lesion in the left circumflex is tempting for an interventionalist but is calcified and the 'real' benefit remains uncertain. His symptoms are mild and could very well be controlled effectively with medical therapy. So, he should be on (ABC) - aspirin, ACE-inhibitor, beta-blocker and cholesterol lowering agent (statin) with the view to aim LDL <1.8 mmol/L and ratio of <2.0. The diabetes control needs to be optimized and dose of metformin should be increased to 1 gm BID and target A1C <0.065. Patient should be educated about the use of nitrospray - for symptoms control and as a preventive strategy. If the symptoms continues or progress despite optimized medical therapy, then should undergo revascularization.

Malvinder Parmar
Timmins, Ontario
Occupation: Physician

Comment ID: 3C67FE
Disclosure: None

FEATURED COMMENT

Posted: 10/29/07

Coronary revascularization could be treatment of choice only in the case of symptoms persistence after full antianginal treatment and risk factors reduction, both not employed in this patient. So all the drugs listed by dr.Yousuf should be given (full antianginal treatment, statin, aspirin and ACE inhibitor-preferably ramipril in the dose titrated up to 10mg or ARB in the case of ACEI intolerance, especially if microalbuminuria is present). However, since the patient doesn't have the symptoms of congestive heart failure and having in mind that combination of diuretic and beta blocker can deteriorate glycemic control, I think that there is no reason to keep the patient on diuretic. Also, the patient should be carefully screened for microalbuminuria and the presence of atherosclerotic disease in other vascular beds, both markers of increased risk. Patient should undertake diet, however although low glycemic diet will improve his glycemic control, long term effect of this diet is not proven alternatively Mediterranean diet, with proved benefit in secondary prevention could be employed.

Reports

☐ Outward Transport of High-Temperature Materials Around the Midplane of the Solar Nebula

Fred J. Ciesla

Science 26 October 2007: 613–615.

High-temperature grains formed near a protosun can be transported efficiently outward along the midplane of the early solar system, explaining how such grains occur in comets.

[Abstract »](#) [Full Text »](#) [PDF »](#) [Supporting Online Material »](#)

☐ A Surface-Tailored, Purely Electronic, Mott Metal-to-Insulator Transition

R. G. Moore, Jiandi Zhang, V. B. Nascimento, R. Jin, Jiandong Guo, G.T. Wang, Z. Fang, D. Mandrus, and E. W. Plummer

Science 26 October 2007: 615–619.

Stresses created by broken symmetry at the surface of a layered oxide allow its surface to undergo a metal-to-insulator transition without a change in its overall structure.

[Abstract »](#) [Full Text »](#) [PDF »](#) [Supporting Online Material »](#)

☐ A Synthetic Lectin Analog for Biomimetic Disaccharide Recognition

Yann Ferrand, Matthew P. Crump, and Anthony P. Davis

Science 26 October 2007: 619–622.

A synthetic receptor binds to specific disaccharides in water with an affinity approaching that of more complex proteins, facilitating discrimination of similar carbohydrates.

[Abstract »](#) [Full Text »](#) [PDF »](#) [Supporting Online Material »](#)

☐ Upper Mantle Discontinuity Topography from Thermal and Chemical Heterogeneity

Nicholas Schmerr and Edward J. Garnero

Science 26 October 2007: 623–626.

Seismic mapping shows that the depths of two key phase changes vary across subduction zones and in response to the temperature and chemistry of Earth's upper mantle.

[Abstract »](#) [Full Text »](#) [PDF »](#) [Supporting Online Material »](#)

☐ The Impact of Agricultural Soil Erosion on the Global Carbon Cycle

K. Van Oost, T. A. Quine, G. Govers, S. De Gryze, J. Six, J. W. Harden, J. C. Ritchie, G. W. McCarty, G. Heckrath, C. Kosmas, J. V. Giraldez, J. R. Marques da Silva, and R. Merckx

Science 26 October 2007: 626–629.

A survey of agricultural soil erosion across the United States and Europe implies that such erosion provides at most a small sink for CO₂ and thus cannot offset emissions.

[Abstract »](#) [Full Text »](#) [PDF »](#) [Supporting Online Material »](#)

As the locus of Real Publication decisively becomes the article's online version, various "non-printing components" are becoming more plentiful. They aren't actually "supplemental" (or, as we initially treated them, "incidental"). Instead, print readers are "whole-article challenged."

Anonymous Atypon Client

Article “parts”

- Publishers are rapidly expanding the traditional publishing model
- Usage of these parts has increased drastically—more than 300% since 2004
- Parts aren’t always supplemental (or incidental); in many cases they are critical
- The definition of use, and the way in which it is counted, needs to change

Redefining “use”

- A work of intellectual property (generally an article) can have many parts
- A user may access one or more parts one or more times in a single session
- The number of parts accessed can help us understand the “depth” of use
- The article and part(s) accessed, and the number of accesses, define the use

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Commentary

Ions, cell volume, and apoptosis

Shan Ping Yu and Dennis W. Choi*

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Programmed cell death culminating in apoptosis is responsible for normal tissue homeostasis and has increasingly been implicated in mediating pathological cell loss (1–3). Apoptosis is accompanied by characteristic morphological changes, including cell body and nuclear condensation, chromatin margination, and the formation of membrane-bound remnants (apoptotic bodies) (4). In recent years much has been learned about the molecular underpinnings of apoptosis, including the release of cytochrome *c* from mitochondria, modulation by *bcl-2* and related genes, and a central role for caspase activation in triggering final events (5). However, despite the universal prominence of cell volume loss in cells undergoing apoptosis, the relationship between this event and ensuing cell death remains uncertain. As posed by Bortner and Cidlowski (6), a key question is whether cell volume loss is “a passive, secondary feature of the cell death process” or a driver of the process.

In this issue of PNAS, Maceno *et al.* (7) present intriguing data supporting the latter possibility. Examining multiple cell types (HeLa, lymphoid U937, NG108–15,

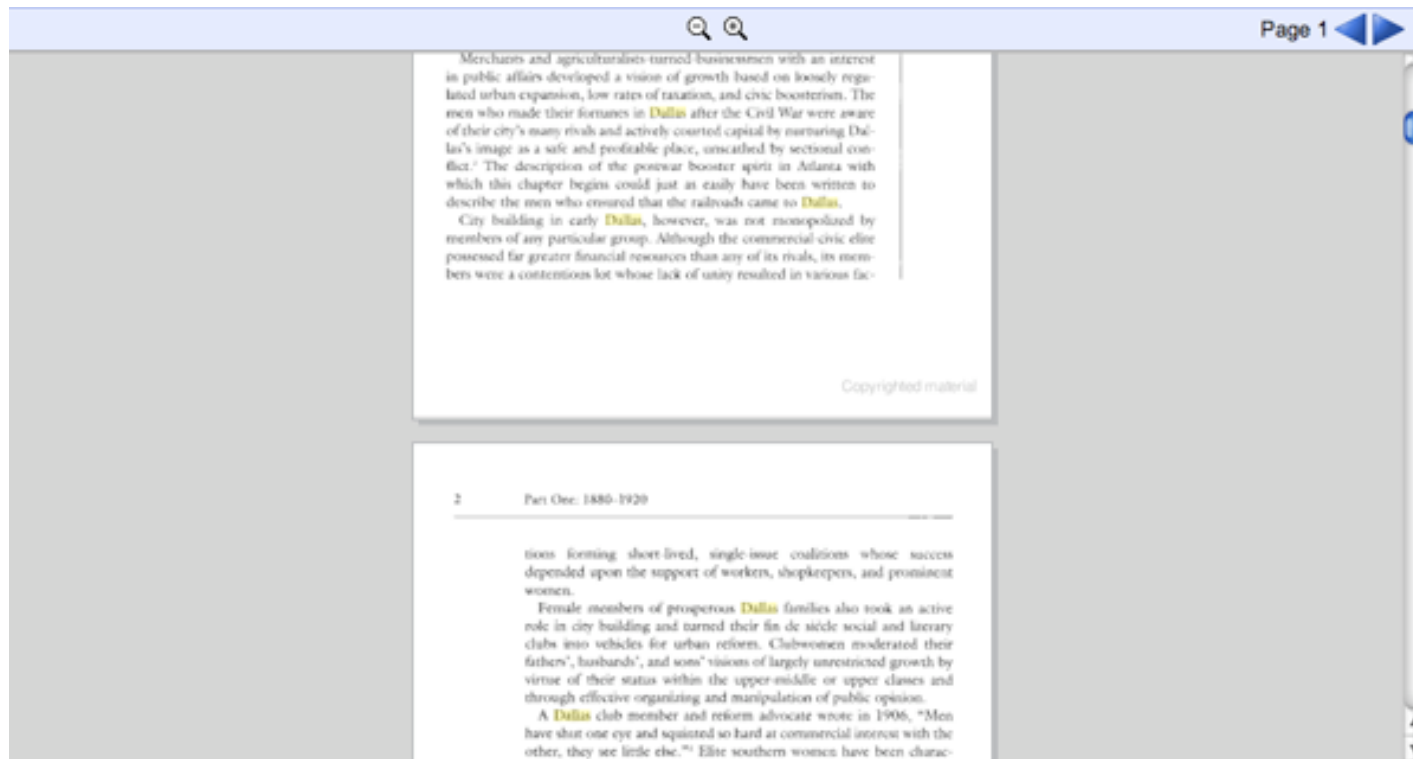
the term “shrinkage necrosis” to refer to the process. These and other groundbreaking morphological studies suggested that cell shrinkage developed relatively quickly in the course of apoptosis (4). Although events occurring before cellular fragmentation were not distinctly resolved in these early studies, more recent studies with greater temporal resolution generally have reached the same conclusion. Rat thymocytes subjected to irradiation (8) or renal tubule epithelial cells microinjected with cytochrome *c* (9) exhibited AVD 30–60 min later, before most other morphological changes. Studies with CD4⁺ T cells (10) or 549 Neo cells (11) demonstrated that AVD could precede DNA fragmentation (although see Nandi *et al.*, ref. 12). Sympathetic ganglion neurons undergoing apoptosis after nerve growth factor (NGF) deprivation developed AVD more slowly—19 h after NGF deprivation—but still before widespread neurite fragmentation, failure of NGF rescue (commitment point), or caspase activation (13, 14).

Maceno *et al.* (7) observed that U937 cells exhibited AVD 1 h after exposure to

thymocytes exposed to glucocorticoids (19). How can these observations be reconciled with evidence that AVD is an early event? Although early, AVD is not the first event in the apoptotic cascade. Some biochemical events including reductions in protein synthesis, glucose uptake, mitochondrial transmembrane potential ($\Delta\psi_m$), and the activity of certain kinases (mitogen-activated protein and phosphoinositide 3-kinase kinases), as well as increased *c-jun* expression, typically precede AVD (13, 14, 20). Different pathways and sequences of events may mediate apoptosis in different cell types, or after different insults. Moreover, the caspase(s) mediating AVD may differ from those involved in late apoptotic execution, e.g., caspase-1 for the former and caspase-3 for the latter (18, 21).

The suggestion that K⁺ channel activation mediates AVD fits with previous work. K⁺ is the predominant intracellular cation (~140 mM), so its efflux seems a likely requirement for serious volume reduction (Fig. 1). Linkage between K⁺ efflux and apoptosis was raised by experiments showing that the K⁺ ionophore

The first page viewed of an article counts as one successful request. The user can request any number of additional pages of this article without reporting additional requests. Another successful request will be reported if the user returns to the first page viewed after more than 10 seconds have passed.





Problem

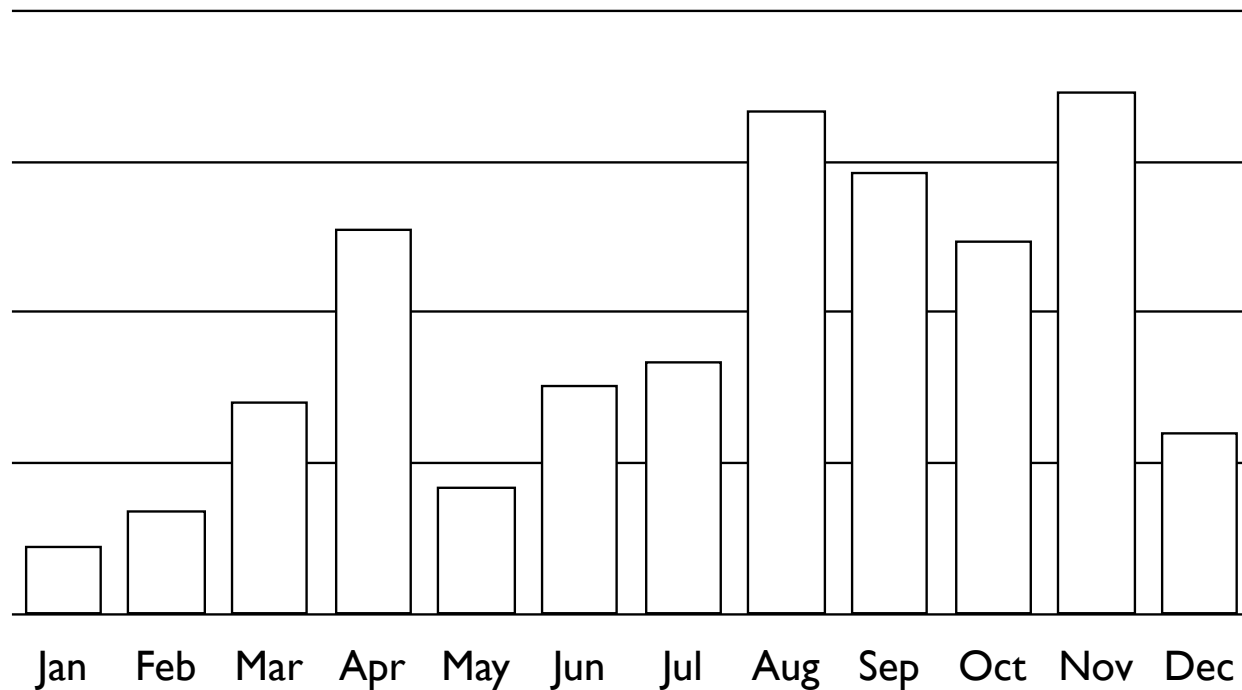
- New interfaces are making it easier than ever for users to navigate through articles
- There is a high likelihood that users will circle back (e.g., to the first page viewed)
- This could have the effect of artificially inflating usage statistics - bad

The first page/view of an article counts as one successful request. The user can request any number of additional page/ views of this article, or the first page/view, without reporting additional requests. Another successful request will be reported if the user accesses any page/view from the article after 30 minutes have passed.

A building block

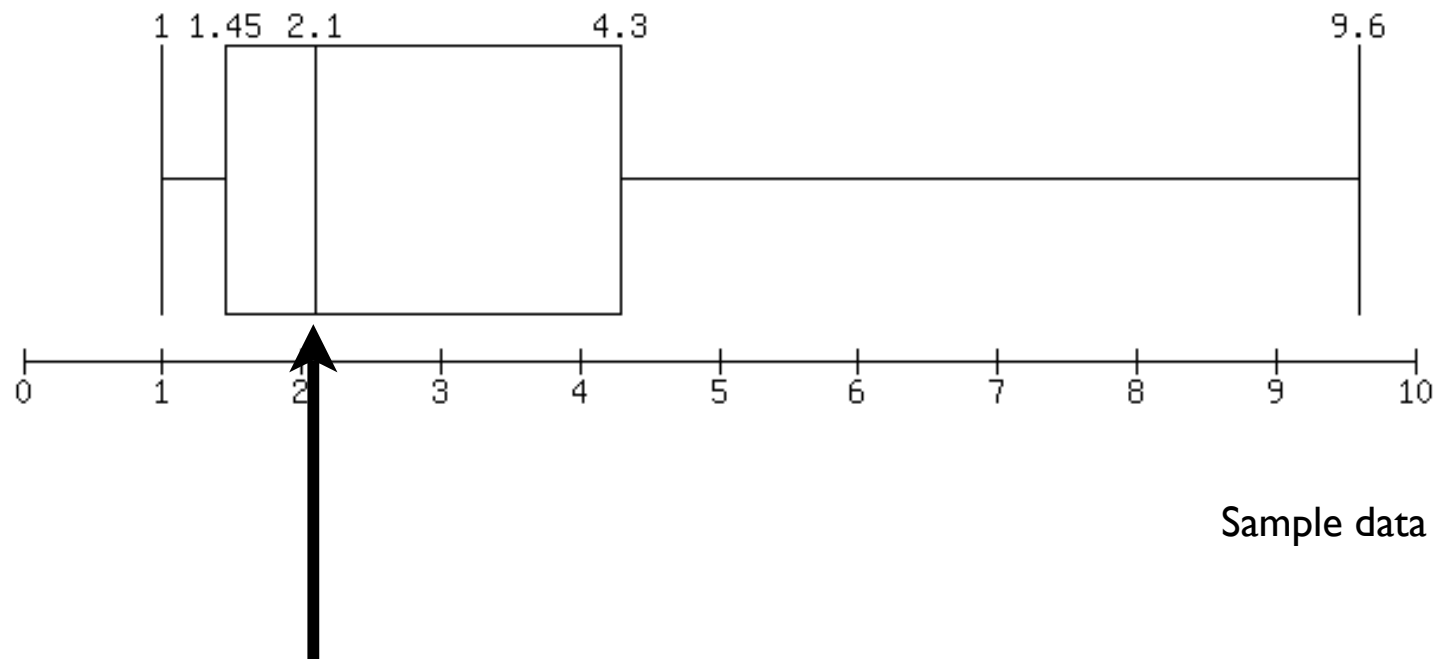
- Replace “page/view” with “part” and you have an extensible model for usage
- In addition to counting the summarized uses, capture usage of the parts, too
- Present both figures to see the full picture of usage: successful requests and depth

Traditional usage report



Sample data

“Depth” usage report



Sample data

Summary

- Current usage statistics do not describe all of the usage that is occurring
- Need an extensible framework for reporting the usage of components
- We have achieved a lot with COUNTER - every reason to believe we can do more



Thank you

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